Chapter 8

QUALITY CONTROL AND PUBLICATIONS

This chapter covers technical inspections—the commander's system of checks and balances, which ensures the highest-quality maintenance effort. High quality decreases unscheduled maintenance, which disrupts flight and maintenance schedules. It also lessens the possibility of maintenance error or inadequate aircraft inspections, which can lead to aircraft damage, personal injury, and even death.

SECTION I – QUALITY CONTROL OPERATIONS

TECHNICAL INSPECTOR

8-1. A TI is responsible to the QC NCOIC, the maintenance or QC officer, and ultimately the unit commander. The TI is the commander's representative in aircraft SOF areas; otherwise, a conflict of interest will arise that will sacrifice objectivity. For this reason, the TI's rating official must not be from the maintenance production area. If a QC NCOIC or QC officer is assigned, that person should be the rater; otherwise, the unit (normally troop/company) XO or commander rates the TI. However, if either the unit XO or maintenance officer also serves as the PC officer, that officer will not rate the TI.

8-2. TIs are under the operational control, not supervision, of the maintenance officer. The maintenance officer establishes priorities for TI work assignments but does not supervise the work. The OIC or the NCOIC distributes the work and supervises the TIs to meet the maintenance officer's work assignments.

QUALITY CONTROL DUTIES

8-3. QC is a management function. It ensures that maintenance is performed according to maintenance manuals for specific aircraft. QC management is coordinated with all phases of production and workload control to maintain maximum production effectiveness. Well-designed QC procedures assure an acceptable level of quality and a decrease in inspection requirements and management efforts. Maximum effective production is balanced against quality without lowering standards. The QC supervisor (the senior ranking or most qualified inspector) coordinates the efforts of the QC team, while TIs do the actual inspecting.

8-4. TIs are responsible for the safety of aircrew members. Their most critical duty is inspecting aircraft. They are also responsible for component and shop inspections and for maintaining and revising publications, forms, and records.

AIRCRAFT INSPECTION

8-5. Safety of the aircraft and crew depends on how well the aircraft is inspected. Refer to TM 1-1500-328-23 for information on the preventive maintenance inspection system, acceptance inspection, transfer inspection, and in-storage inspection. For maintenance

expenditure limits, as well as disposition instructions for crash, mishap, battle damage, deteriorated, or other natural phenomenon, refer to TB 43-0002-3.

Turn-In/Pickup of Aircraft at AVIM

8-6. Because TIs are the people most knowledgeable of support maintenance, they accompany aircraft turned in to AVIM for maintenance. They also review aircraft records with AVIM personnel, resolve questions on the spot, perform a joint inventory with AVIM personnel, and accompany AVIM inspectors on the initial inspection of the aircraft. Upon completion of repairs and before acceptance of the aircraft, inspectors perform a joint inventory with AVIM personnel, review aircraft records for accuracy and completeness, and inspect aircraft to ensure that requested work was properly performed. If repairs are deferred because parts are unavailable, TIs ensure that they are ordered.

Aircraft Technical Compliance (Technical Bulletins)

8-7. TIs ensure that all requirements of applicable aircraft TBs are met and required entries are made on applicable DA forms. TIs are also responsible for two actions—grounding an aircraft if required by the TB (refer to AR 95-1) and submitting reports required by AR 95-1 to report compliance with TBs.

Army Oil Analysis Program

8-8. TIs ensure that all aircraft are entered in the program, and that all required records are maintained. Refer to AR 750-1, TB 43-0106, and DA Pam 738-751 for specific instructions. TIs ensure the following:

- Oil samples are taken according to TB 43-0106.
- DD Form 2026 (Oil Analysis Log) is complete and accurate.
- All samples are dispatched expeditiously to the laboratory.
- Special samples requested by the laboratory are taken immediately.
- Notification is given to the assigned servicing laboratory of replacement or removal of AOAP components.

MONITOR COMPONENT TBO AND RETIREMENT LIFE

8-9. QC personnel use computerized printouts or a time between overhaul and retirement life component chart to monitor the in-service time of all aircraft components requiring replacement on an hour or calendar basis. For a list of these components, refer to the applicable aircraft maintenance manual.

8-10. TIs ensure that the time between overhaul or retirement life is not overflown unless specifically authorized in TM 1-1500-328-23. Review TBO chart or computerized printouts and update periodically but not less than the reporting period (AR 700-138) and when reportable components are replaced. Two variations of the TBO chart can be used—time-change component schedule chart (Figure 8-1) and time-change bar graph component chart (Figure 8-2). If computerized printouts are used, make sure they contain all required information (Figure 8-3) and maintain a separate disk copy in the QC office. QC personnel must notify maintenance officers and NCOs when 100 hours remain until replacement of hourly components and when 2 months remain until replacement of calendar components. This allows adequate time for advance ordering of replacement parts.

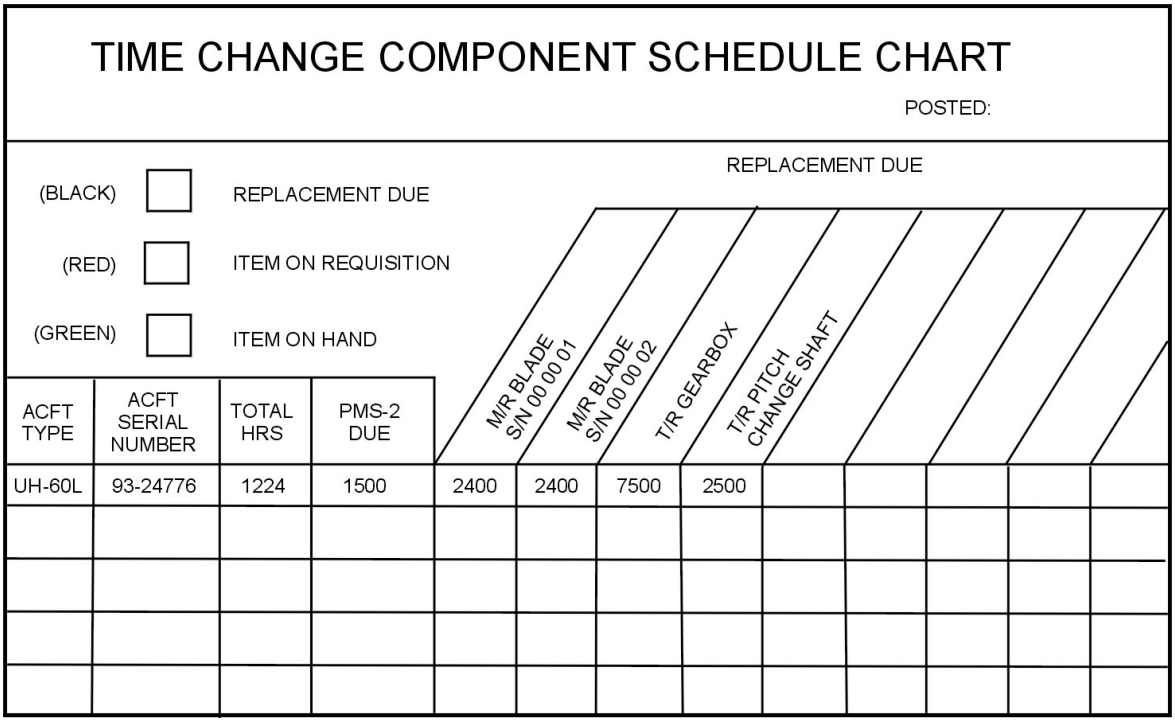


Figure 8-1. Sample Format for a Time-Change Component Schedule Chart

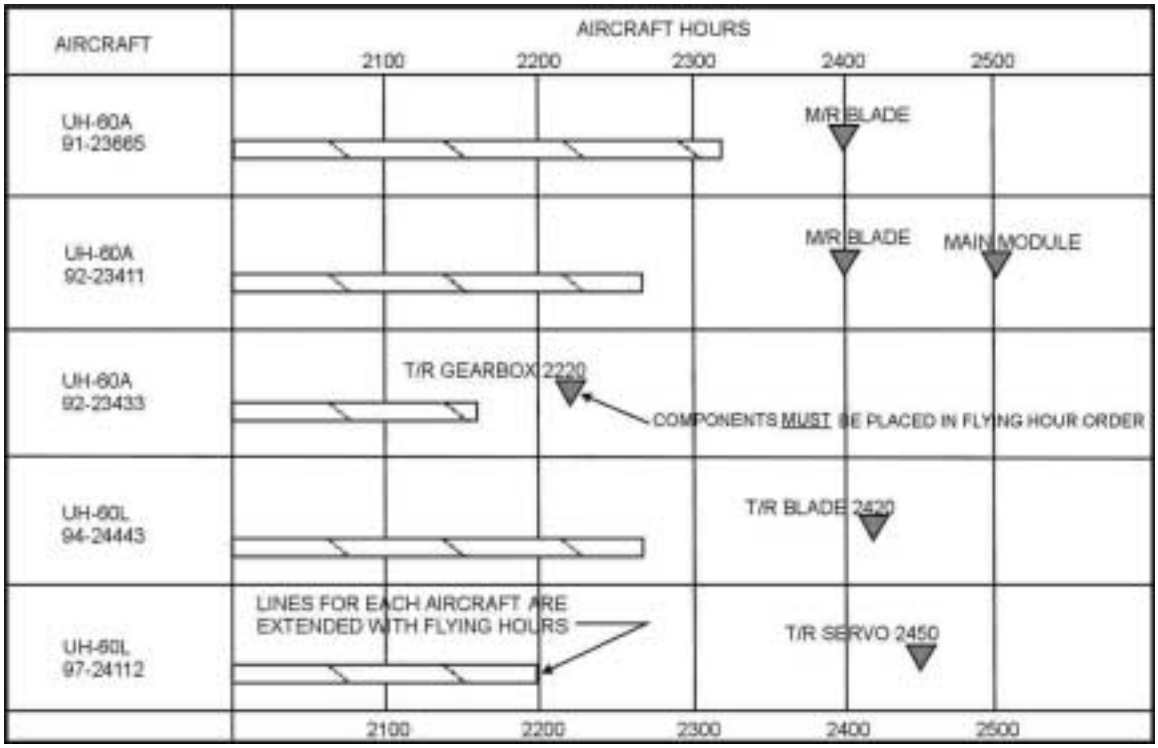


Figure 8-2. Sample Format for a Time-Change Bar Graph Component Schedule Chart

2408-16 COMPONENT PROJECTION REPORT

PCN:AVAHRIGA

REPORT DATE: 12-MAY-94 **UIC: WG31A8**

AIRCRAFT SERNO: 6916148 **CURRENT HOURS: 3576.8**

PROJECTED HOURS: 988

WUC	PART NUMBER	NSN	NOMENCLATURE	SERIAL NUMBER	AIRCRAFT HOURS TBO DUE	AIRCRAFT HOURS UNTIL DUE
85A81H84	286-811-148-1	1615818386653	RETENTION STRAP FITTING	A-4583	3695.0	118.2
85A81H84	286-811-148-1	1615010306653	RETENTION STRAP FITTING	A-1948	3695.0	118.2
85A81H83	286-818-123-3	5315000919358	RETENTION STRAP PIN	A19-38098	3695.0	118.2
85A81H83	286-818-123-3	5315000919358	RETENTION STRAP PIN	A19-38060	3695.0	118.2
85A81H	286-811-154-101	1615010631268	RETENTION STRAP	LK-11923	3695.0	118.2
85A81H	286-811-154-101	1615010631268	RETENTION STRAP	LK-11919	3695.0	118.2
84A85C	6895653	2915010444551	PUHP ASSY, FUEL	PE6398	4010.0	433.2
84A85G	2524912-2	2915011799734	GOVERNOR ASSY	86168686	4288.0	711.2
84A85A	2524911-3	2915012510688	FUEL CONTROL	337434	4473.0	896.2

Figure 8-3. Sample Format for a Computerized Time-Change Component Printout

SHOP INSPECTION

8-11. This QC inspection includes two areas—facility and equipment (shop safety) and test equipment (calibration).

Shop Safety

8-12. When performing the facility and equipment inspection, TIs check the shop and shop equipment for proper layout, clear fire lanes, fire extinguisher serviceability, and installation and use of equipment safety devices. A shop that is below standard cannot put out quality work. TIs conduct informal inspections of the various shops periodically and bring any deficiencies or safety hazards found to the attention of shop supervisors. Keep a file of all safety inspections in the QC section and a file copy in the subject area inspected.

8-13. The USASC publication, Guide to Aviation Resources Management for Aircraft Mishap Prevention, outlines safety procedures. It has guidance on inspection requirements for the TI. Get copies from the unit safety officer. Minor changes to the guide appear in the USASC publication, Flightfax, which is distributed monthly to all aviation units. Other publications outlining specific safety precautions are FM 4-20.12(10-67-1) and TM 1-1500-204-23 series. See Appendix E for a sample shop safety inspection checklist.

Test Measurement and Diagnostic Equipment

8-14. TMDE includes testers, test sets, and other test equipment used to verify that aircraft systems are functioning properly or that they are malfunctioning. TMDE may be portable or fixed in place, depending on the design. Whether or not a unit contains specific items of equipment depends on its category of maintenance (AVUM or AVIM) and its TOE. Detailed description and operating instructions for the most common test equipment can be found in the TM 1-1500-204-23-series manuals.

8-15. TMDE is used to test aircraft, components, and accessories. The equipment tests systems for proper functioning, analyzes malfunctioning units, and presents an accurate picture of serviceability. QC inspectors use TMDE to monitor maintenance procedures. Safe, economical operation of Army aircraft depends on the skilled use of TMDE in a comprehensive maintenance program. TIs ensure the following:

- An organizational maintenance program for TMDE is established.
- A TMDE support coordinator is appointed in the unit. The support coordinator is the focal point of contact for matters pertaining to TMDE support. An alternate coordinator is appointed and assigned the responsibility of monitoring the TMDE support program. Keep a copy of the appointment in the QC files (AR 750-43 and AR 25-400-2).
- A DA Form 7372 (TMDE Calibration and Repair Data) is submitted to the supporting activity for each item requiring calibration (TB 750-25).
- A TMDE not listed in TB 43-180 is reported according to TB 43-180 and TB 750-25.
- A DA Label 80 (US Army Calibrated Instrument) or DA Label 163 (US Army Limited or Special Calibration) is attached to items requiring calibration.
- TMDE are calibrated at the prescribed interval (TB 43-180). After removal from temporary storage, submit TMDE for calibration before use.

PUBLICATIONS MAINTENANCE

8-16. QC and shop personnel establish and maintain a complete, up-to-date set of technical publications for supported aircraft. These publications provide instructions on procedures and issue, operation, maintenance, repair, modification, serviceability standards, testing, inspection, and storage of equipment. Publication personnel are appointed in the unit. They are responsible for ordering and maintaining the unit's publication accounts.

8-17. Upon receipt of a new index, DA Pam 25-30 (published quarterly on CD), the TI reviews publication files (technical libraries) throughout the maintenance activity for completeness and currency. TIs also assist in preparing recommendations for changes to publications on DA Form 2028 or DD Form 173/3(OCR) (Joint Message Form [Blue]) (Cat I Deficiency Report only). The TI establishes and maintains a file of recommended changes (AR 25-400-2).

Familiarization Chart

8-18. QC and shop personnel must have a technical data familiarization chart or computer printout to ensure that maintenance personnel are familiar with publications relevant to their duties. See Figures 8-4 and 8-5 for samples. All publications applicable to equipment maintained and names of maintenance personnel are listed. Personnel initial beside each publication to indicate their familiarity with that publication. As changes are received, post the change number and erase the initials. After reviewing each change, personnel initial the chart or printout again. Each shop maintains separate charts or printouts. TIs check the charts or printouts during publication review to ensure the following:

- All publications used by the shop are listed.
- All shop personnel are listed.
- All personnel have initialed to indicate their understanding of the publications.
- All changes are posted according to DA Pam 25-40.

* Quality Control

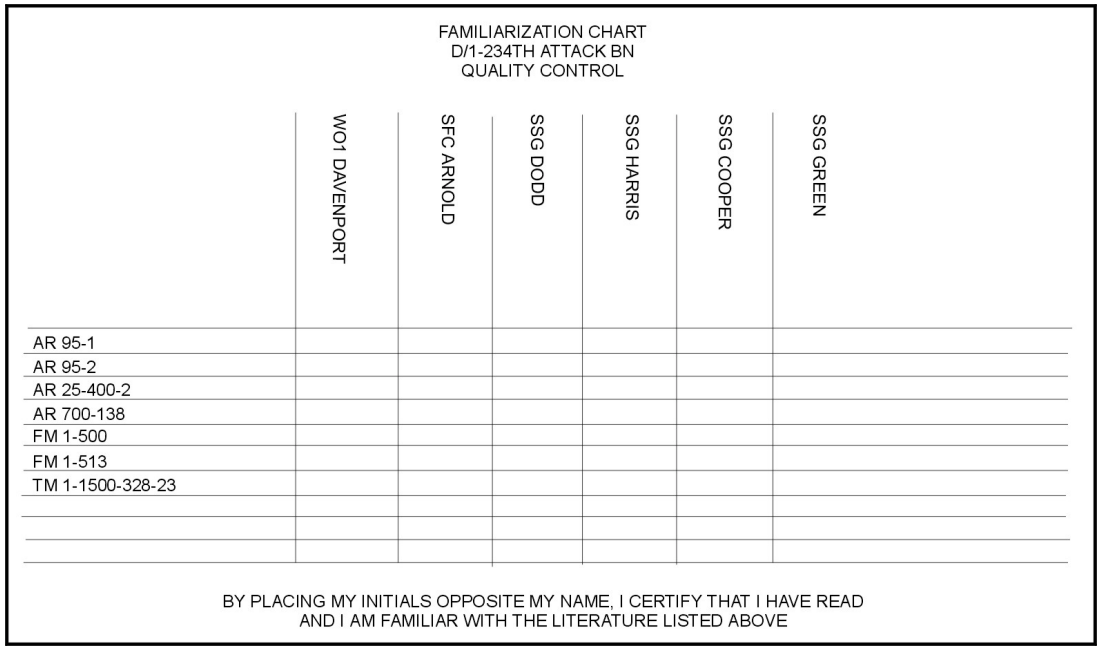
TECHNICAL DATA FAMILIARIZATION CHART

BY PLACING MY INITIAL OPPOSITE MY NAME, I CERTIFY THAT I HAVE READ AND I AM FAMILIAR WITH THE LITERATURE LISTED BELOW **TECHNICAL MANUAL	CHANGE NUMBER	MSG LAYMAN	MSG MATTOX	SFC BARR	SFC GAST	SSG HONEYCUTT	SSG WILEY	SSG MAZER	SGT KAY	SGT KEMP	SGT FAUSTICH	SGT WESLEY	SGT KRAFT				
1-1500-204-23 SERIES		L	M		G			M					K				
1-1500-328-23		L	M		G			M				W	K				
1-1500-344-23		L	M		G			M									
1-1520-238-10		L	M		G			M		K							
1-1520-238-23 SERIES		L	M			H		M									
1-1520-238-23P SERIES		L	M	B		H		M									
55-1500-335-23		L	M	B		H	W	M	K		F						
55-1500-342-23		L	M	B				M									
55-6670-200-14&P		L	M	B				M	K								
750-245-4		L	M	B			W	M									
AR 95-1		L	M	B				M									
AR 95-2		L	M	B	G	H		M		K	F						
AR 700-138		L	M	B	G	H		M		K	F						

* ENTER NAME OF SECTION OR SHOP

** ENTER MANUALS MOST COMMONLY USED WHEN PERFORMING THE DUTIES OF EACH SHOP OR SECTION.

Figure 8-4. Sample Format for a Technical Data Familiarization Chart



FAMILIARIZATION CHART
D/1-234TH ATTACK BN
QUALITY CONTROL

	WO1 DAVENPORT	SFC ARNOLD	SSG DODD	SSG HARRIS	SSG COOPER	SSG GREEN
AR 95-1						
AR 95-2						
AR 25-400-2						
AR 700-138						
FM 1-500						
FM 1-513						
TM 1-1500-328-23						

BY PLACING MY INITIALS OPPOSITE MY NAME, I CERTIFY THAT I HAVE READ AND I AM FAMILIAR WITH THE LITERATURE LISTED ABOVE

Figure 8-5. Sample Format for a Computer Printout of Familiarization Chart

Files Management

8-19. The most important files maintained by QC personnel are TWX files. These TWXs may ground aircraft, impose operating limitations, or provide information on aircraft maintenance techniques. Maintain separate TWX files for each model of aircraft assigned or supported. Maintain one file for general messages. TWXs are either informational or apply to specific models of aircraft. Separate each aircraft TWX file into two sections—SOF/ASAM messages and maintenance and technical advisory messages. For more guidance on files management and SOF/ASAM messages, refer to ARs 95-1 and 25-400-2.

FORMS AND RECORDS

8-20. TIs monitor all forms and records for accuracy and completeness. They monitor aircraft historical records, weight and balance records, aircraft maintenance records, blank forms, and PQDR.

Aircraft Historical Records

8-21. TIs maintain historical records for each aircraft assigned to their unit according to Chapter 4 and Appendix D of DA Pam 738-751. TIs must ensure all essential historical records are on file and updated as required.

Weight and Balance Records

8-22. The assigned technician maintains the aircraft's weight and balance records. TIs coordinate with the technician anytime that maintenance on the aircraft could affect weight and balance. Refer to AR 95-1, TM 55-1500-342-23, the aircraft operator's manual, and the aircraft maintenance manual for information. The -10 operator's manual and the applicable maintenance manual contain weight and balance data.

8-23. Before an aircraft is delivered, the manufacturer inserts all aircraft-identifying data on the various charts and completes all forms. DD Form 365 series, charts, and any other pertinent data about the aircraft's weight and balance are maintained in a permanent binder. The binder and all forms list the aircraft's designation and serial number. TI annotates any changes that affect the aircraft's weight and balance on these forms.

8-24. Weight and balance forms for each aircraft will be safeguarded and maintained. Each aircraft serial number and information to be inserted on the charts or forms apply only to the individual aircraft. Individual weight and balance forms serve various purposes; therefore, their retention periods vary. Standard forms will be used with this data to provide an effective system for weight and balance control. The weight and balance data and related forms for each aircraft will be maintained according to AR 95-1 and Chapter 4 of TM 55-1500-342-23.

Aircraft Maintenance Records

8-25. TIs monitor all records used in aircraft maintenance for accuracy and completeness as per DA Pam 738-751. TIs check the accuracy of these records each time they signoff a deficiency and as the completed forms are turned into their office. Many units also establish reconciliation between the flight platoons and QC to assist in monitoring the accuracy of these records. See paragraphs 8-48 through 8-59 below for procedures on inspecting aircraft forms and records.

Blank Forms

8-26. TIs ensure that a 30-day supply of blank forms is on hand in the maintenance section.

Deficiency Reports

8-27. TIs are responsible for maintaining a PQDR file (AR 25-400-2), assigning PQDR control numbers, and establishing a PQDR log (see example at Figure 8-6). TIs check all submitted PQDRs for accuracy and completeness and assist in determining the category. If an exhibit is needed, they ensure that all applicable forms and records accompany the exhibit (DA Pam 738-751). TIs review the TB 43-0001-series of equipment improvement and maintenance digests before submitting the PQDR.

8-28. The TI investigates any deficiency that occurs on a continuing basis. If a materiel defect is involved, the TI submits a PQDR informing AMCOM of the problem. If the defect is due to workmanship, the TI informs all maintenance personnel of the problem, its possible effects, and how to correct it.

CONTROL NUMBER	SUBJECT & CATEGORY	EXHIBIT Y OR N	DATE OF SUBMITTAL	DATE OF REPLY
8TZFFF 940003	OH-58 PUMP, SUBMERGED, RUBBER CHECK VALVE MISSING FROM TOP OF FUEL BOOST PUMP HOUSING (CAT 1)	YES	23 JUN 94	25 NOV 94

Figure 8-6. Sample Format for a Deficiency Report Log

GENERAL TECHNICAL INSPECTION PROCEDURES

8-29. Technical inspection of aircraft maintenance ensures that standards and practices established by applicable publications are followed. It also ensures that all applicable technical requirements are met, the maintenance shop is organized, and quality work is performed efficiently. Before performing an inspection, QC personnel review the latest applicable reference material to ensure that the inspection meets current requirements. To ensure uniform safety and reliability, inspection procedures must be standardized.

RED-X AUTHORIZATION

8-30. The TI is the commander's designated representative for aircraft maintenance QC. Authorization to sign off "red-X" or "circled-red-X" conditions is designated in writing (by memorandum or on DA Form 1687) by the owning unit commander. This provides the name, rank, and duty position of the TI and authorizes him to inspect and sign off red-X and circled red-X conditions on specific aircraft models and components. Only the TI's initials and signature are required to release an aircraft for flight. A sample signature and initials help eliminate unauthorized use by other personnel.

8-31. A TI or maintenance supervisor who works on a red-X or circled-red-X fault cannot sign off the work as his own TI. The work must be inspected and signed off by another person designated in writing by the commander. If no repair work or maintenance is involved and only an inspection required, the TI performs the inspection and signs off with no recheck. The parent unit's orders are sufficient authority to sign off a red-X or circled-red X on aircraft belonging to another unit (DA Pam 738-751).

NOTE: When authorization is given to sign off red-X or circled red-X conditions on specific aircraft models or components, the memorandum must list these items and be signed by the commander. Keep a copy of the authorization on file in the QC office for six months after the representative departs the unit.

DESIGNATED REPRESENTATIVE

8-32. Several manuals contain phrases stating that an individual (the commander or property book officer, for example) or a designated representative performs a particular function. This authority is designated in writing (by memorandum) or DA Form 1687. TOE/TDA units maintain a memorandum, as applicalbe, of the following designated representatives:

- Aviators appointed as maintenance test pilots (AR 95-1 and TM 1-1500-328-23).
- Personnel entering deferred maintenance on DA Form 2408-14-1 (DA Pam 738-751).
- Personnel signing for and turning in equipment (aircraft maintenance only) (AR 750-43).
- Personnel authorizing evacuation of aircraft on a red-X status for a one-time evacuation mission (DA Pam 738-751).
- Personnel authorizing a change of aircraft red-X (status symbols) for the performance of a one-time test flight (DA Pam 738-751).
- Personnel inspecting aircraft first aid kits (TM 1-1500-328-23).
- Weight and balance technician (AR 95-1).
- Unit safety officer (AR 385-95).
- Unit safety NCO (AR 385-95).
- TMDE support coordinator and alternate (AR 750-43).
- Personnel qualified to inspect, service, and repair oxygen equipment.
- Publications officer or NCO (DA Pam 25-33).
- Commander's assumption of command orders.
- AOAP monitor (TB 43-0106).
- Personnel qualified to inspect ejection seats by type and model.
- Personnel qualified to repair or work on ejection seats by type and model.
- Unit maintenance officer.
- Controlled exchange officer (AR 750-1).
- Servicing records manager (AR 25-400-2).

8-33. Whichever form is used, it states the function that is delegated. Completed forms will be kept on file in the QC office. Changes or revisions to subsequent Army

publications affecting the above designations will be reviewed. Additions or deletions of orders will be made at that time.

INSPECTION STAMPS

8-34. An inspection stamp will be used to indicate a satisfactory condition. It carries the same authority as a TI's signature and must be guarded against unauthorized use. If an inspection stamp is used, it is round and no larger than 1/2 inch in diameter (see Figure 8-7). It includes the unit designation and TI's number. The stamp will be obtained through local purchase. The following requirements must also be met:

- Keep unissued stamps under lock and key.
- Destroy illegible stamps.
- Do not assign relieved stamps for six months.
- Keep a stamp inventory or register (see Figure 8-8) in the QC section.

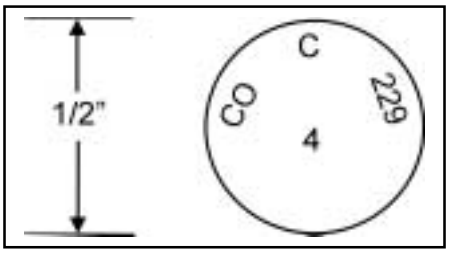


Figure 8-7. Inspection Stamp Sample

STAMP NUMBER*	ASSIGNED TO	DATE ASSIGNED	DATE RELIEVED
1	JERRY H. BROWN SSG	16 FEB 97	
2	JOHN W. DOE	23 AUG 97	3 DEC 98
3			
4			
5			
6	STAMP DESTROYED (LOST)		
2	DAVE E. HONEYCUTT SFC	4 JUN 99	

*ALL STAMP NUMBERS MUST BE INCLUDED AND ACCOUNTED FOR

Figure 8-8. Sample Inventory/Register of Inspection Stamps

STATUS SYMBOLS

8-35. For a discussion of status symbols for aircraft defects, refer to DA Pam 738-751.

NONDESTRUCTIVE INSPECTION

8-36. Nondestructive inspection is a tool of QC inspection. Aircraft components may have suspected metal flaws that must be confirmed or denied. A defect may be visible, but the seriousness of it is unknown. For example, scratches can look like cracks and hairline cracks can look like scratches. In any case, the TI must evaluate the defect. That is when the TI turns to nondestructive inspection.

8-37. Nondestructive inspection testing methods are used to determine the composition, integrity, dimensions, or properties of a component or structure without causing damage to the item. Some nondestructive inspection methods include liquid penetrant, magnetic particle, electromagnetic, ultrasonic, and penetrating radiation methods. Nondestructive inspection details and procedures are fully discussed in TM 1-1500-204-23-7 and TM 55-1500-335-23.

QUALITY CONTROL AIRCRAFT INSPECTIONS

8-38. Aircraft are inspected to ensure that published specifications are followed, maintenance requirements are complied with, and quality work is completed efficiently. Many times a TI is not completely familiar with the area or item being inspected. If this is the case, the TI reviews the manuals on the subject area or item. In general, the TI monitors maintenance procedures to ensure the following:

- Proper tools and equipment are used.
- Aircraft and components are maintained according to specific publications.
- Publications used are current.
- Forms and records are complete and accurate.
- Safety precautions are observed.

8-39. TIs perform some aircraft inspections at specific times. These inspections include initial, 100-percent, in-progress, and final inspections.

INITIAL INSPECTION

8-40. AVIM inspectors perform an initial inspection before the aircraft enters the shop for maintenance to verify that aircraft or components meet specifications of published maintenance manuals. This inspection determines deficiencies, work required, economical repair of aircraft and components and accountability of equipment.

NOTE: Minor AVUM deficiencies will not justify refusal to accept an aircraft into the AVIM shops.

8-41. All deficiencies are entered on DA Form 2408-13-3. The form(s) are returned to PC after the inspection. Only those cowling and access panels necessary to inspect the faults listed on DA Form 2407 by the AVUM unit are removed.

ONE-HUNDRED PERCENT INSPECTION

8-42. AVIM or AVUM TIs perform a 100-percent inspection. This type of inspection is usually performed if numerous faults are found during other inspections (such an initial

inspection). The QC personnel should coordinate with the PC or maintenance officer before performing a 100-percent inspection.

8-43. The TI performs the 100-percent inspection by removing all cowling and access panels and inspecting the entire aircraft, including all systems and components. Items to look for during the inspection are the following:

- Correct assembly.
- Proper safety techniques (for example, use of safety wire and cotter pins).
- Wear.
- Rigging.
- Leaks.
- Structural defects (cracks, punctures, loose rivets, separation in honeycomb panels, and so forth).
- Security of components.

IN-PROGRESS INSPECTION

8-44. The in-progress inspection is a continuing inspection performed periodically while the aircraft or component is in the shop (especially important during phase/periodic inspections). The TI should be available to answer the repairers' questions and resolve problems. Set up the stations, if possible, so that the inspector is near the work being performed. Equipment at each station should include all items needed to perform the inspection. All necessary forms, publications, tools, and test equipment should also be available. AVUM and/or AVIM TIs perform this inspection. It ensures that the final product is reliable, areas are inspected before they are covered with access panels or components, and mistakes are discovered and corrected on the spot.

8-45. Before performing an in-progress inspection on aircraft in phase/ periodic maintenance, the TI reviews all logbook forms and records that are completed by the maintenance crew. Enter deficiencies missed by the maintenance team on DA Form 2408-13-1.

FINAL INSPECTION

8-46. A final inspection is a complete inspection and functional test (if required) of all aircraft or components released from the shop after maintenance. This inspection determines the following:

- Repairs meet the specifications of the maintenance manuals.
- Work requested on DA Form 2407 was completed.
- Correct tools and equipment were used.
- Entries on DA forms are complete and accurate.
- Aircraft or component conforms to standards.

8-47. Major (red-X) deficiencies will be corrected before the aircraft or component leaves the shop. Minor (red-diagonal) shortcomings will be corrected based on the availability of parts and man-hours. All deferred maintenance has a valid requisition or work-order number. The decision to defer maintenance rests with the commander or designated representative as stated in DA Pam 738-751.

FORMS AND RECORDS INSPECTION

8-48. Forms and records are the first items checked in any aircraft inspection. All form entries must follow the policies in DA Pam 738-751, TM 55-1500-342-23, and TB 43-0106. All necessary forms, publications, tools, and test equipment are available at the inspection station. Refer to DA Pam 738-751 for the required locations of the various forms. Some items to look for when inspecting forms are listed below.

DA FORM 2408-12

8-49. TIs ensure that hours and landings are correctly totaled.

DA FORM 2408-13 SERIES

8-50. TIs ensure that the following actions are completed::

- Hours and landings are correct and correctly carried forward from DA Form 2408-12 (Army Aviator's Flight Record).
- Current aircraft hours, landings, autorotations, and APU history and rounds fired, if applicable, are correctly carried forward from previous DA Form 2408-13 (Aircraft Status Information Record).
- Status in Block 10 reflects the most serious uncorrected fault listed on DA Forms 2408-13-1, 2408-13-2, 2408-13-3, and 2408-14-1.
- All corrected red-X and circled-red-X corrective actions were inspected by an authorized inspector.
- All uncorrected entries signed off as carried forwarded from the previous DA Form 2408-13-1 are on the current DA Form 2408-13-1.
- Entries are carried forward word for word, and status symbols are correct.
- Inspection times are correctly carried forward from previous DA Form 2408-13.

DA FORM 2408-14-1

8-51. TI ensure the following actions are completed:

- Faults are transcribed word for word from DA Forms 2408-13-1 or 2408-13-3.
- Reasons for delay are valid (work order number, document number, or awaiting phase in Block 6).
- Individual’s signature (Block 8) is an authorized signature, as designated in writing.

DA FORM 2408-18

8-52. TIs ensure that all required inspection items are entered. They will enter any inspection that is due on DA Form 2408-13-1.

DA FORMS 2408-5 (EQUIPMENT MODIFICATION RECORD) AND 2408-5-1 (EQUIPMENT MODIFICATION RECORD)

8-53. TIs ensure the following actions are completed:

- All applicable modifications are entered in Section 4.
- Required completion date is entered in pencil in Block 5F for modification not complied with.

DA FORMS 2408-15 (HISTORICAL RECORD FOR AIRCRAFT) AND 2408-15-2 (AIRCRAFT VIBRATION RECORD)

8-54. TIs ensure the following actions are completed:

- Form is on hand for aircraft and/or for each gas turbine engine.
- Significant historical data is shown, as required by DA Pam 738-751.
- Turbine engine analysis checks are listed.

DA FORMS 2408-16 (AIRCRAFT COMPONENT HISTORICAL RECORD) AND 2408-16-1 (HISTORY RECORDER, COMPONENT, MODULE RECORD)

8-55. TIs ensure the following actions are completed:

- Required forms are on hand as listed in DA Pam 738-751.
- Serial numbers match component serial numbers on the aircraft.
- Replacement due date is correct and not past due.

DA FORM 2408-17 (AIRCRAFT INVENTORY RECORD)

8-56. TIs ensure the following actions are completed:

- All applicable items listed in the master inventory guide are shown in Column b.
- Property additions and deletions made after aircraft delivery are correctly reflected.
- All equipment checks have a signature in the corresponding numbered block at the bottom of the form.
- All items added, deleted, or short are explained on the back of the form (refer to DA Pam 738-751).

DA FORMS 2408-19 (AIRCRAFT ENGINE TURBINE WHEEL HISTORICAL RECORD), 2408-19-1 (T53/T55 TURBINE ENGINE ANALYSIS CHECK RECORD), 2408-19-2 (T700 SERIES TURBINE ENGINE ANALYSIS CHECK RECORD), AND 2408-19-3 (ENGINE COMPONENT OPERATING HOURS RECORD)

8-57. TIs ensure that these forms are properly completed and on hand for each gas turbine and engine turbine wheel.

DA FORM 2408-20 (OIL ANALYSIS LOG)

8-58. TIs ensure that a properly completed form is on hand for each aircraft component in the AOAP.

DD FORMS 365 (RECORD OF WEIGHT AND BALANCE PERSONNEL), 365-1 (CHART A-BASIC WEIGHT CHECKLIST RECORD), 365-2 (FORM B-AIRCRAFT WEIGHING RECORD), 365-3 (CHART C-BASIC WEIGHT AND BALANCE RECORD), AND 365-4 (WEIGHT AND BALANCE CLEARANCE FORM F-TRANSPORT/TACTICAL)

8-59. TIs ensure that these forms are on hand and up-to-date as required by AR 95-1 and TM 55-1500-342-23.

TECHNICAL COMPLIANCE

8-60. The TI monitors and ensures compliance with MWOs, TBs, SOF messages, ASAM, and aviation safety action messages.

MODIFICATION WORK ORDERS

8-61. Upon receipt of an MWO that applies to the serial-numbered aircraft assigned to your unit, TI enters MWO information on DA Form 2408-5 (refer to DA Pam 738-751). This includes MWOs directed by a higher commander. TI also enters MWOs that apply only to aircraft based at specific locations. If the aircraft serial numbers are included, the TI lists the MWO on DA Form 2408-5. Complete DA Form 2408-5 showing MWO compliance. Sign off the MWO entry on DA Form 2408-13-1 (refer to DA Pam 738-751).

8-62. If the MWO is not applied by the specified date, TI enters the MWO on DA Form 2408-13-1. For an overdue normal MWO, TI reenters it on DA Form 2408-14-1 (refer to DA Pam 738-751).

TECHNICAL BULLETINS

8-63. TBs direct one-time inspections of an aircraft or component. DA Forms 2408-13-1, 2408-15, 2408-5-1, 2408-16, and 2408-18 are used to ensure compliance with TBs.

DA Form 2408-13-1

8-64. TI or crew chief uses this form to enter the one-time inspection due on the aircraft or aircraft component. Technical inspections are performed according to the TB. Normally, if a TB is not applied within the specified period, the aircraft is grounded. If no defects are found, the inspection due is signed off on DA Form 2408-13-1. If defects are found, they will be entered on DA Form 2408-13-1. Maintenance personnel are notified for corrective action. After the defect is corrected, the corrective action is inspected and the inspection due is signed off on DA Form 2408-13-1.

DA Form 2408-15

8-65. TIs enter a one-time inspection of an aircraft airframe and related systems and subsystems on this form.

DA Form 2408-5-1

8-66. TIs enter TBs that apply to components on DA Form 2408-5-1 (see DA Pam 738-751). The procedure is the same as for MWOs.

DA Form 2408-16

8-67. If a TB applies to a component on which DA Form 2408-16 is maintained, the TI enters TB compliance in Block 7. DA Pam 738-751 and TB 1-1500-341-01 for each MDS of aircraft list all components that require DA Form 2408-16.

DA Form 2408-18

8-68. A TB may require a recurring inspection at specified intervals. If so, TI enters this inspection on DA Form 2408-18 for the aircraft.

SAFETY-OF-FLIGHT MESSAGES/AVIATION SAFETY ACTION MESSAGES

8-69. TIs comply with SOF messages and ASAMs and log them on applicable DA forms according to DA Pam 738-751.

SECTION II – PUBLICATIONS

TYPES OF PUBLICATIONS

8-70. Army publications describe policies and procedures used in aircraft maintenance and maintenance management. QC personnel ensure that publication libraries are current and updated with the latest changes. TIs set up and maintain the master reference library consisting of many types of publications.

ARMY REGULATIONS

8-71. ARs provide policies and responsibilities that govern administrative procedures and ensure compliance at all levels. Section 4 of DA Pam 25-30 contains an index of ARs. Subject matter is identified by a basic number. For example, all ARs in the 95-series are about aviation. A subnumber preceded by a dash indicates additional information about the basic subject, (such as AR 95-1, Flight Regulation and AR 95-2, Air Traffic Control.

DEPARTMENT OF THE ARMY PAMPHLETS

8-72. DA Pams contain permanent information or reference material. Section 4 of DA Pam 25-30 contains an index of DA Pams. DA Pams are numbered in the same manner as ARs. A subnumber preceded by a dash distinguishes between DA Pams with the same basic number. For example, all DA Pams in the 25 series are about Army publications, such as the following:

- DA Pam 25-30 is an index of publications and blank forms.
- DA Pam 25-33 is the standard Army publication's system revision of the DA 12-series forms, usage, and procedures.

FIELD MANUALS

8-73. FMs outline military doctrine, tactics, and techniques. They include instructions and reference material on training, operations, and maintenance management. Section 5 of DA Pam 25-30 contains an index of FMs. FMs are also numbered in the same manner as ARs. A basic number identifies the primary subject, and a subnumber indicates additional information. For example, all FMs in the 3-04 series (1 series) are about aviation operations—FM 3-04.111(1-111), Aviation Brigades and FM 3-04.500(1-500), Aviation Maintenance.

TECHNICAL MANUALS

8-74. TMs provide training information on a variety of subjects and on specific items of equipment. Section 8 of DA Pam 25-30 contains an index of TMs. TMs for specific equipment provide instruction on operation, maintenance, and overhaul. They also provide a parts list and breakdown. The first two digits of these manuals identify the preparing technical service.

8-75. A dash and a four-digit number indicate the FSC code, including the equipment within the FSC. For example, -1510 represents fixed-wing aircraft, and -1520 represents rotary-wing aircraft.

8-76. A dash and a three-digit number indicate the MDS of a particular aircraft. For example, -238 represents AH-64A helicopters, and -248 represents OH-58D helicopters. A dash and a two-digit number represent the category of maintenance. For example, -10 is for operators, and -23 is combined for AVUM and AVIM personnel.

8-77. A serial number preceded by a dash or a slash is added when a TM is published in more than one volume; such as, -1, -2, or /1, /2, and so forth. The letter "P" is used as a suffix when the repair parts and special tools lists are published in a volume separate from the maintenance instructions. This volume will have the same basic number as the corresponding TM. Examples of these TMs are as follows:

- TM 1-1520-238-10, operator's manual for the AH-64A helicopter.
- TM 1-1520-238-23-1, AVUM and AVIM maintenance instructions for AH-64A helicopters.
- TM 1-1520-238-23P-1, first volume of repair parts and special tools list for AH-64A helicopters.

TECHNICAL BULLETINS

8-78. TBs contain technical information on equipment or professional management techniques. The most common TBs encountered by QC personnel direct one-time inspections of aircraft or components. Section 7 of DA Pam 25-30 contains an index of TBs. Urgent inspection requirements are initially sent to the units by a TWX. The subsequent TB then supersedes the TWX. TBs directing one-time inspections are classified by priority as urgent, limited urgent, and normal.

Urgent

8-79. Urgent TBs contain aircraft conditions that affect SOF. These conditions may cause damage or destruction to aircraft and death or injury to personnel. An urgent TB may direct that a specific aircraft be grounded. Normally, grounding takes place within a certain flying hour or calendar period. When grounding aircraft, follow procedures listed in the TB.

Limited Urgent

8-80. A limited urgent TB allows the aircraft to be operated only under specific conditions or limitations. These conditions are listed in the TB.

Normal

8-81. Normal TBs are issued when problems occur that reduce equipment efficiency, life expectancy, or use of the aircraft. These TBs do not impose any operating limitations; however, maintenance must be accomplished within a specified time.

8-82. TBs for specific items of equipment are numbered in the same manner as TMs for that item. An added number preceded by a slash differentiates between TBs on the same item. The two-digit group indicates which category performs the TB maintenance. TBs pertaining to two or more different items of equipment within the same FSC have a zero for the third digit. An example of these TBs is the following:

- TB 55-1500-337-24:
  - -1500 refers to all aircraft.
  - The zero as the third digit indicates that this TB pertains to two or more different items of equipment within this FSC.
  - -24 indicates that this TB applies to AVUM through depot levels of maintenance.

MODIFICATION WORK ORDERS

8-83. MWOs are the only publications that authorize modification or alteration of Army equipment. MWOs are issued to—

- Provide compatibility with newer equipment.
- Prevent serious damage to equipment.
- Increase operational effectiveness.
- Reduce support requirements.

8-84. Each MWO contains specific instructions concerning the following:

- Time limit for compliance.
- Maintenance category to which the MWO applies.
- Parts required.
- Man-hours required.
- Form entries required.
- Method for performing the modification.
- Weight and balance data.

8-85. As with TBs, MWOs are assigned priorities. The priority classifications and numbering system are the same as for TBs. Section 6 of DA Pam 25-30 contains an index of MWOs.

SAFETY-OF-FLIGHT/AVIATION SAFETY ACTION MESSAGES

8-86. SOF and aviation safety action messages provide information concerning safe operation of an entire model or series of Army aircraft. These messages are transmitted by TWX to all organizations concerned. The message number indicates general or specific information. General messages apply to all aircraft, while specific messages apply only to a specific series of aircraft. Examples of these messages are the following:

- GEN-96-4.
  - This is a general message that applies to all aircraft or maintenance facilities.
  - It was written in FY 96.
  - It was the fourth general message sent in FY 96.
- UH-60-96-14.
  - This is a specific message that applies to the UH-60-series aircraft.
  - It was written in FY 96.
  - It was the 14th UH-60 message sent in FY 96.

8-87. Three types of SOF messages are emergency, operational, and technical.

Emergency

8-88. These messages contain serious information. They usually denote hazardous aircraft conditions that cause aircraft damage or personal injury. Emergency SOF messages are later published as urgent TBs or MWOs.

Operational

8-89. These messages, issued by the USASC, impose operating limitations on aircraft.

Technical

8-90. These messages ground or require modification of the aircraft. They usually require removal and replacement, or modification of the parts or components. Messages are issued by AMCOM and are later published as urgent action TBs or MWOs.

8-91. The three types of aviation safety action messages are maintenance mandatory, informational, and operational.

8-92. **Maintenance Mandatory**. These messages direct maintenance actions and/or update TMs.

8-93. **Informational.** These messages provide information of a maintenance technical or general nature.

8-94. **Operational.** These messages pertain to aircraft operations, flight procedures, limitations, or operational policies.

8-95. Every three months, AMCOM publishes an index of all messages they transmitted during that period. Check the message file when the index arrives to ensure that all required messages are on hand. For a detailed discussion of SOF aviation safety action messages, refer to AR 95-1 and DA Pam 738-751.

SUPPLY BULLETINS

8-96. SBs provide important supply information to maintenance personnel. This information includes the following:

- Stock number changes.
- Direct-exchange list changes.
- Reports on new materiel.
- Information on AIMI.

8-97. SBs are numbered in sequence by calendar year and usually have an expiration date. Section 6 of DA Pam 25-30 contains an index of SBs.

FEDERAL AVIATION ADMINISTRATION PUBLICATIONS

8-98. The FAA publishes books on aviation and aircraft maintenance. Only authorized Army-approved publications are used for aircraft maintenance. Do not use FAA or any other federal agency publications for maintenance unless authorized in writing or as part of a logistic support plan.

CHANGED/REVISED/RESCINDED PUBLICATIONS

8-99. Effective aircraft maintenance requires that the latest technical information be on hand at all times. Since Army publications are continually being updated, QC personnel ensure that units have adequate quantities of current publications. Therefore, it is necessary to understand how the publications distribution system operates. DA Pam 25-33 is necessary for the TI. This pamphlet explains the following:

- How initial distribution and resupply are made.
- Which DA forms are required to order publications.
- Where to order publications.
- How a publications account is set up.

(**NOTE:** DA Pam 25-40 provides information on posting and filing publications.)

CHANGES

8-100. Rather than reprint an entire manual, changes are published to update existing manuals. Minor changes accumulate before being printed. Serious errors result in the immediate printing of a change, which may be issued as an IAIC. The IAIC is only printed once and is not stocked for reorder.

Posting

8-101. When posting changes, personnel will ensure the following procedures are followed:

- Be accurate and neat. A publication that is incorrectly or illegibly posted is as worthless as one that has not been posted.
- Use a sharp, black pencil so that posting can be erased easily if future changes or corrections are necessary.
- Print or write the authority for changing a basic publication in the outside margin of the page by the changed portion. This authority is usually a numbered change (for example, C1). If the changed portion affects more than one page, make the same notation on all pages concerned.
- Draw a line through the first and last lines of the text when three or more lines of text are affected; then connect these lines from top right to bottom left, forming a Z-shaped figure.
- Ensure that change numbers are posted in proper sequence. An urgent change may be posted out of sequence (ahead of previous numbered changes) if authority to do so is stated on its front page.
- Ensure that manuals are not superseded or rescinded.

Interim Changes

8-102. When there is no time to issue a printed change, a TWX is used to amend a publication. The message is identified as an interim change. Prepared in the format of a published change, the message provides the exact language of the changed material. When posting the change, personnel will follow the procedures directed by the message. The message number and date are posted in the margin of the publication opposite the changed portions (for example, DA message 0614202 Mar 96).

8-103. A copy of the message is filed in front of the basic publication or the last printed change. If a copy is not available, a cross-reference sheet is inserted showing where a copy of the message can be found. When the next printed change or revision of the publication is received, the suppression notice is checked. If the notice states that the message is rescinded or superseded, the message or cross-reference sheet is removed and destroyed.

REVISIONS

8-104. A revision is a complete new edition of an existing publication. It supersedes the preceding publication, together with all changes, supplements, and appendixes.

SAFETY-OF-FLIGHT SUPPLEMENTS

8-105. SOF supplements are used to quickly provide safety information when a hazardous condition exists. These supplements contain important operational, precautionary, and restrictive instructions that cause flight limitations. The first page is printed with a bold

red border and the words SAFETY-OF-FLIGHT appear at the top and bottom of the page. Supplements have the same title as the basic publication they supplement. When safety-of-flight information applies to more than one type of aircraft, an individual supplement is issued for each type of aircraft involved. These supplements are issued in one of two forms—interim or formal.

Interim

8-106. Interim supplements are publication changes issued by TWX when loss of life or serious personal injury is involved.

Formal

8-107. Formal supplements are issued and distributed through normal channels when serious damage to the aircraft is involved or to replace previously issued interim supplements.

RESCISSIONS

8-108. A publication is rescinded (canceled) when its material becomes obsolete. Destroy obsolete publications. DA Pam 25-30 contains a list of rescinded publications.

DISPOSAL

8-109. Publications will be discarded after they have been rescinded or superseded. Classified publications are discarded according to AR 380-5 and unclassified publications will be discarded according to instructions from the local disposal officer. However, do not discard old publications until new ones are reviewed. DA Form 12-series (Requirements for Distribution of Publications and Blank Forms) will be used to order the quantity of publications needed. If more publications are received than needed, the DA Form-12 series will be updated according to DA Pam 25-33. You will determine if other aviation units need the publications; if not, contact the post adjutant general publications officer for disposal instructions.

TECHNICAL LIBRARIES

8-110. Technical files and libraries are required on all equipment. Local policies differ according to the size of the unit concerning the location of publications. In a small unit, they may be filed in the maintenance office or QC office. In field maintenance (AVUM/AVIM) or depot operations, they may be filed in a technical library. In either case, the area should be convenient to maintenance personnel. DA Pam 25-40 is required reading for TIs. It explains setting up, maintaining, and posting changes to technical libraries.

MASTER AND SHOP

8-111. TIs are responsible for two types of libraries—master and shop. The master library is located in the QC office and is used by all personnel. It contains publications required to maintain all series of aircraft supported by the shop. The shop library contains manuals on the specific duties of the shop. Inspectors ensure that these manuals are up to date. TIs also check the master and shop libraries quarterly to ensure the following:

- Libraries are located conveniently to users.
- All required manuals are on hand or on order.

- No unnecessary publications are on hand.
- Changes are properly posted and indexes reflect the status of publications on hand.
- No superseded or rescinded manuals are used.
- Classified manuals are controlled according to the AR 380 series.

FILING SYSTEM

8-112. AR 25-400-2 and DA Pam 25-40 will be used as master guides for maintaining the technical publications' files. DA Pam 25-30 contains an index of DA publications and forms. The status of publications will be verified against the listings in the latest index. A star by the number indicates a new publication or a revised edition. A star following the entry indicates a change in the title or a new change.

8-113. If publications are received before they appear in the index, you will prepare and keep a list with the index. When these publications appear in the index, they will be deleted from the list. In addition, rescinded publications will be lined out as rescission notices are received. Be sure to check the current supersessions and rescissions section of the index. If all supersessions and rescissions are posted correctly, files are accurate and agree with the index. The following types of publications will be filed as described below:

- TMs—numerically, when letters are added to the publication number—numerically and alphabetically. For example:
  - TM 1-1500-204-23 series
  - TM 1-1520-238-10
  - TM 1-1520-238-23-1
  - TM 1-1520-238-23P-1
  - TM 1-1520-238-23P-2
  - TM 1-1520-238-PMS
- TBs—numerically, preceding or inside the front cover of the applicable TM (if related to a specific TM). TBs that do not pertain to a specific TM are numbered consecutively and filed alphanumerically, separately from TMs.
- MWOs—numerically, separately from TMs.
- Supply manuals—alphanumerically.
- Lubrication Orders—with manuals that they apply to (a lubrication order has the same number as the TM or TB that best covers preventive maintenance for the equipment).
- SBs—numerically.
- FMs—numerically.
- Supply catalogs—numerically by FSC, then alphabetically.
- DOD manuals—numerically by federal classification, then alphabetically.
- Supply letters—numerically, separated by CY.
- SOF supplements—alphanumerically immediately following the basic publication.

INTERSERVICE PUBLICATIONS ACCOUNTS

AIR FORCE PUBLICATIONS

8-114. Some of the equipment used by the Army is procured through the Air Force. However, publications to support these interservice items are not always obtained with the equipment. To establish an Air Force publications account use the following procedures:

- Complete two copies of AFTO Form 43 (Air Force Technical Order).
- Complete one copy of AFTO Form 187 (Resupply and Initial Distribution Form).
- Mail copies to Commander, Oklahoma City Air Logistics Center, ATTN: OC-ALC/M-MDUB, Tinker AFB, OK 73145.

NAVY PUBLICATIONS

8-115. NPFC 2002 will be used to order Navy publications. This index is available only on microfiche. There is no charge for Navy publications, but there is a charge for blank forms. To obtain permanent distribution of the index, write to Naval Publications and Forms Center, 5801 Tabor Avenue, ATTN: CODE 1011, Philadelphia, PA 19120.

8-116. Once an account is established, Navy publications are ordered using DD Form 1348M (DOD Single Line Item Requisition System Document [Mechanical]). Requisitioning instructions are in AR 725-50. An authorized DODAAC number, which can be obtained from the unit supply document register, must be assigned to DD Form 1348M when ordering Navy publications. After a proper UIC is established, publications are mailed to the address on the DODAAC. Permanent distribution of publications is obtained by writing to Commanding Officer, Naval Air Technical Services Facilities, 700 Robins Avenue, ATTN: CODE 321, Philadelphia, PA 19111. Binders used to store publications are available through the same procedures.

8-117. Military specifications and standards are also available through the Naval Publications and Forms Center. DD Form 1425 (Specifications and Standards Requisition) is used to request a copy of the index. Once the initial index is received, all further orders are requested using DD Form 1425.